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- (57)
- ABSTRACT**

- A system and method for delivering purchasing incentives and a variety of other retail shopping aids through a computer network, such as by E-mail over the Internet or the World Wide Web. Customers (10) of retail stores can establish a bi-directional communication link with the system, log in (16) to the system, and then elect to browse among available purchasing incentive offers (18, 22), or elect to explore other shopping aids, such as a shopping list generator (26), a recipe center (30), or simply elect to claim a product rebate or to receive product information. If the customer elects to have product information or rebate information delivered, only minimal customer identification is required. For purchase incentives redeemable at retail stores, the customer must provide identification information and must also designate a retailer (12) at which the purchasing incentive can be exercised. For receipt of focused incentives based the customer's past shopping behavior, the customer must also supply a unique customer id., such as a check cashing card number or credit card number, used for in-store purchases. For delivery of a product sample, the customer's name and address must be supplied. The system merges this customer-supplied information (270) with other purchase incentive data (272) and creates a printable graphical image of the purchasing incentive (282) for transmission to the customer. In an alternate embodiment of the invention, the purchase incentive is not transmitted directly to the customer. Instead, the terms of the incentive are transmitted electronically to the retail store (310) designated by the customer, who receives either a token (316) to present at the store or an advisory message. In yet another embodiment of the invention, incentives may be targeted to specific consumers based on a consumer purchase history (502), and transmitted to consumers' computers (510) using electronic mail addresses stored in a consumer database (506).

- This patent is subject to a terminal disclaimer.

- (22) Filed: May 12, 1999

### Related U.S. Application Data

- (58) **Field of Search** ..... 705/14, 1, 10,  
705/26, 27; 709/238

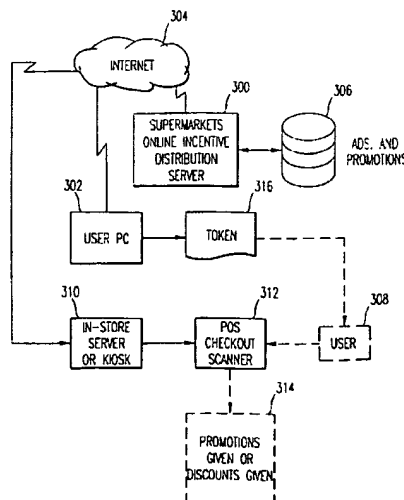
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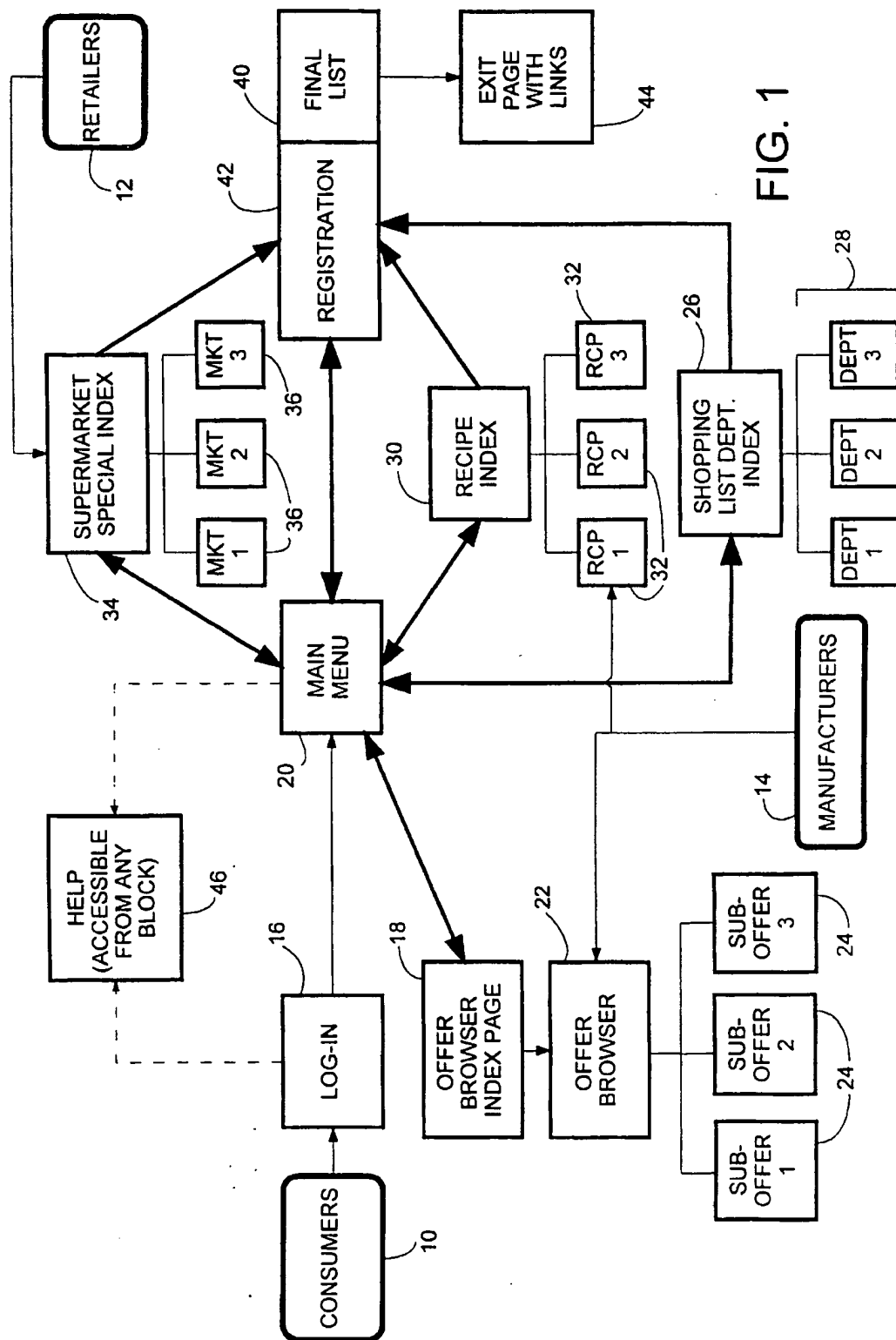
## U.S. PATENT DOCUMENTS

5,644,723 \* 7/1997 Deaton et al. .... 705/14

\* cited by examiner

**10 Claims, 15 Drawing Sheets**





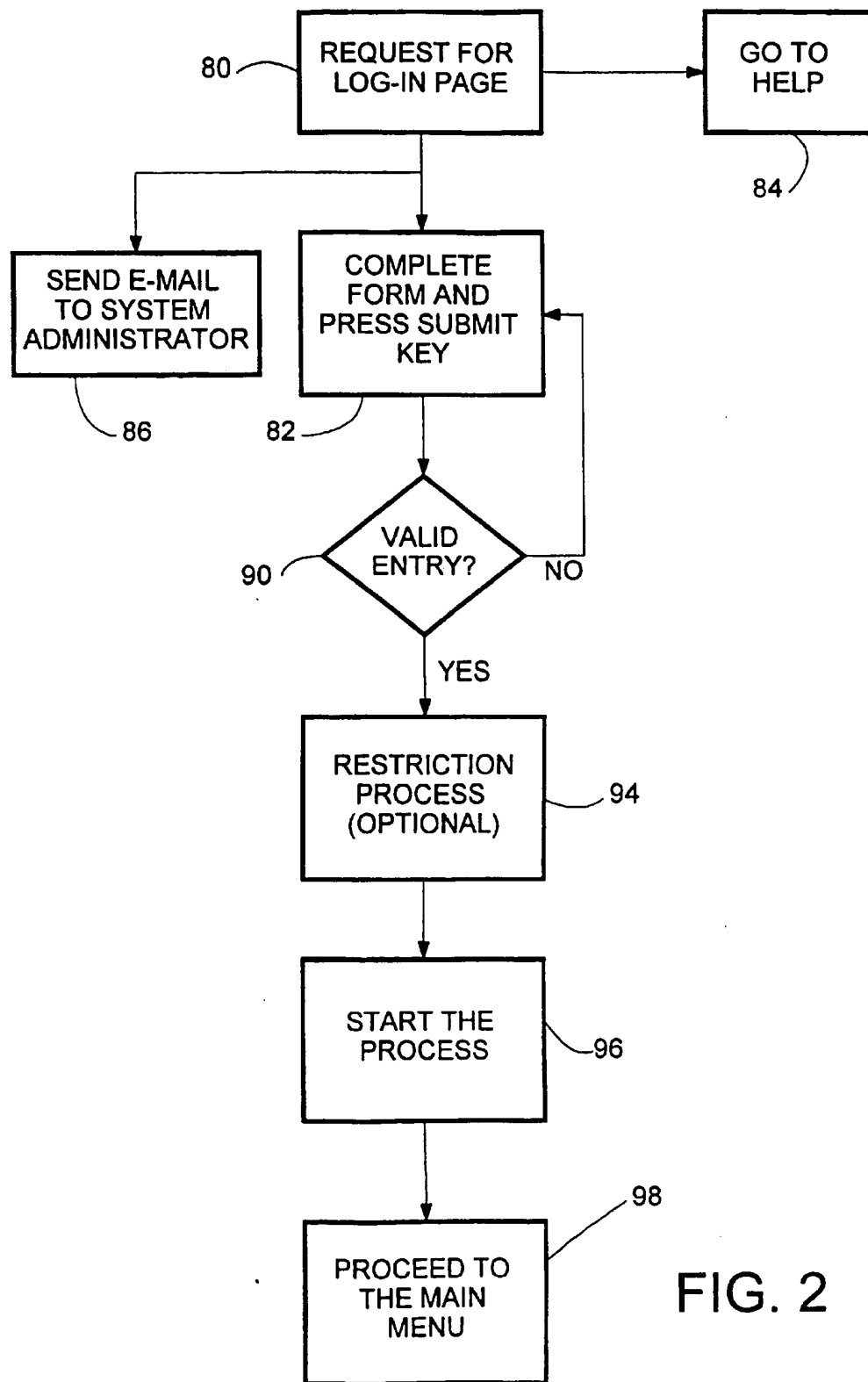


FIG. 2

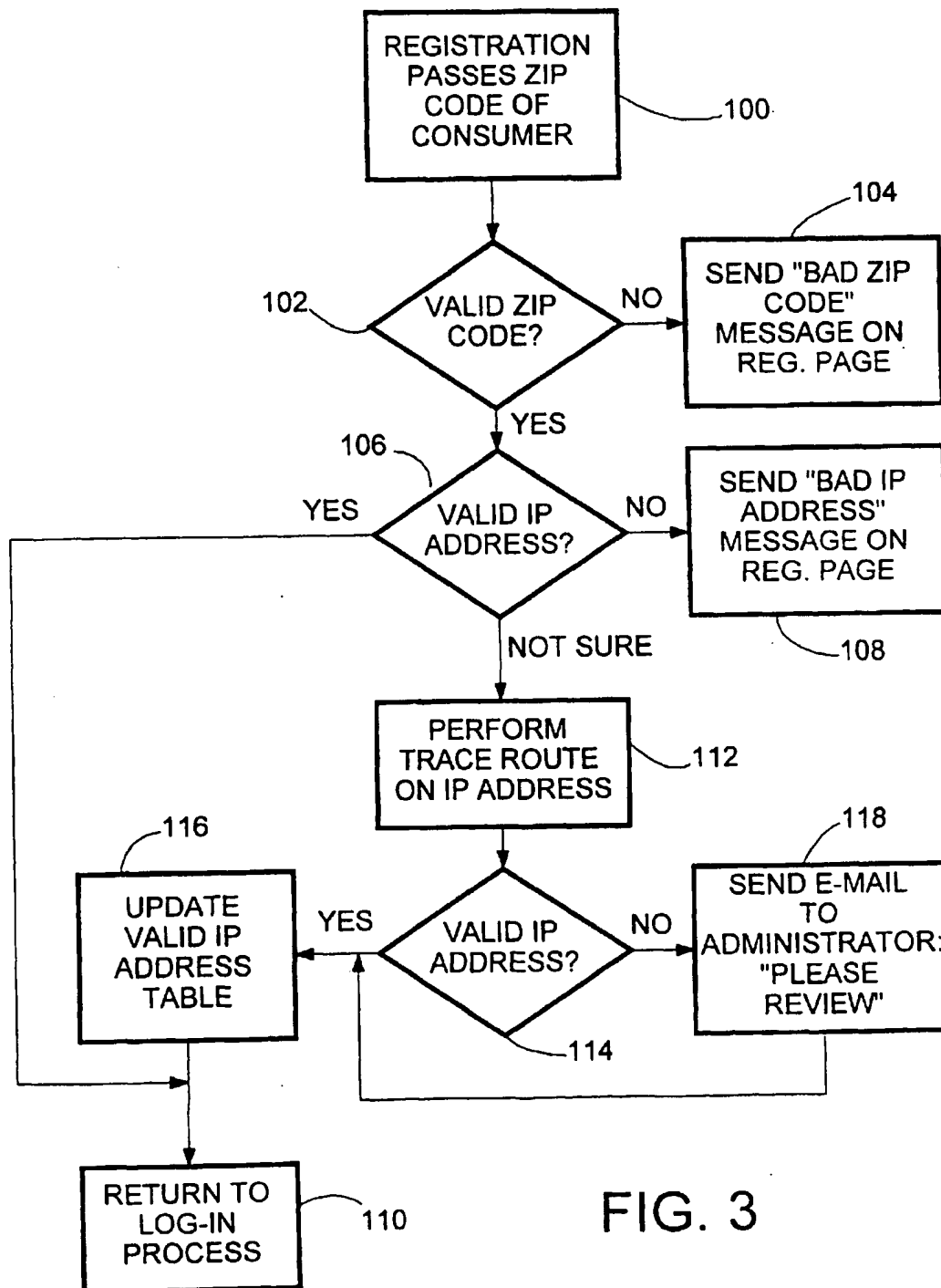


FIG. 3

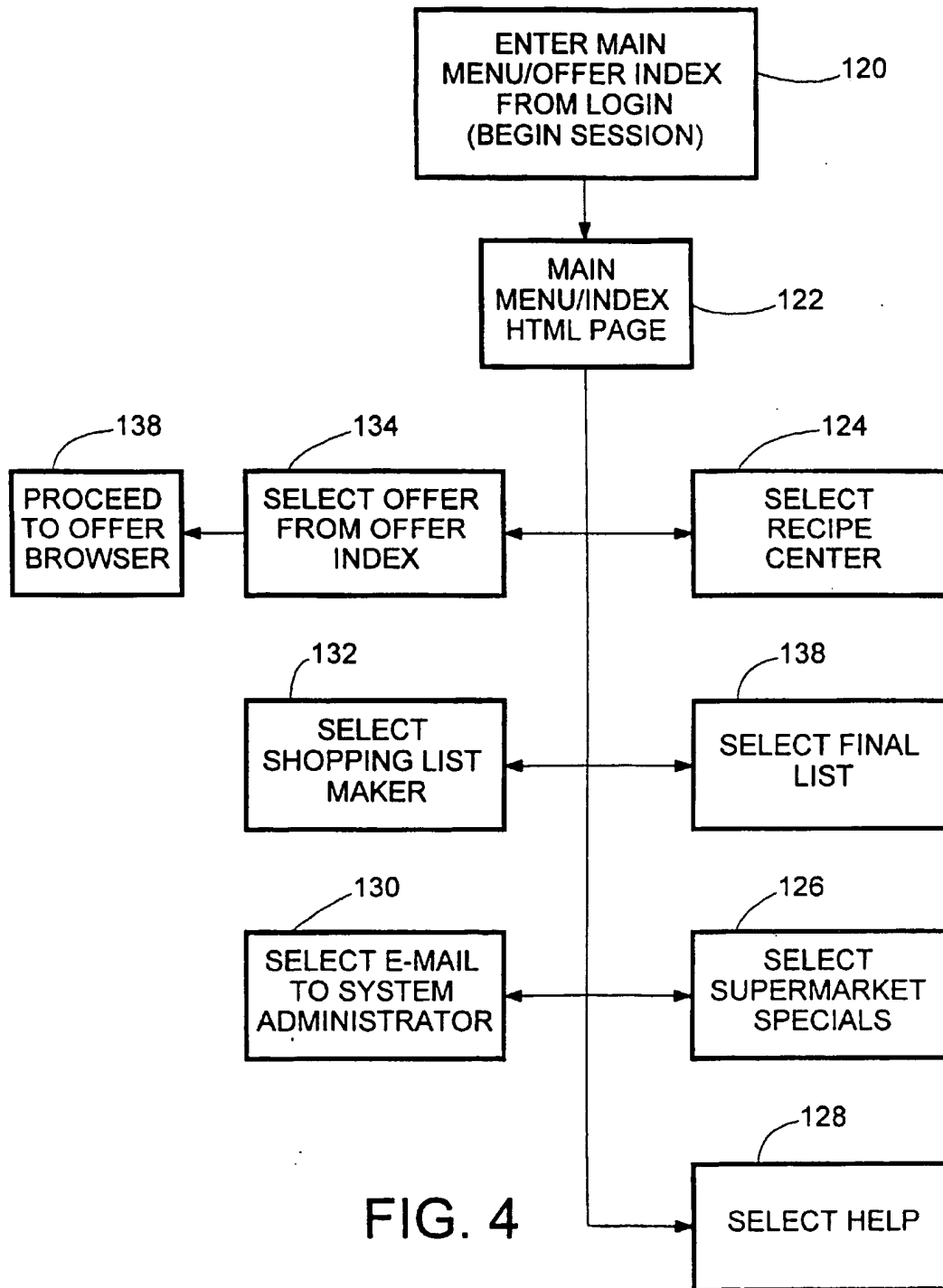


FIG. 4

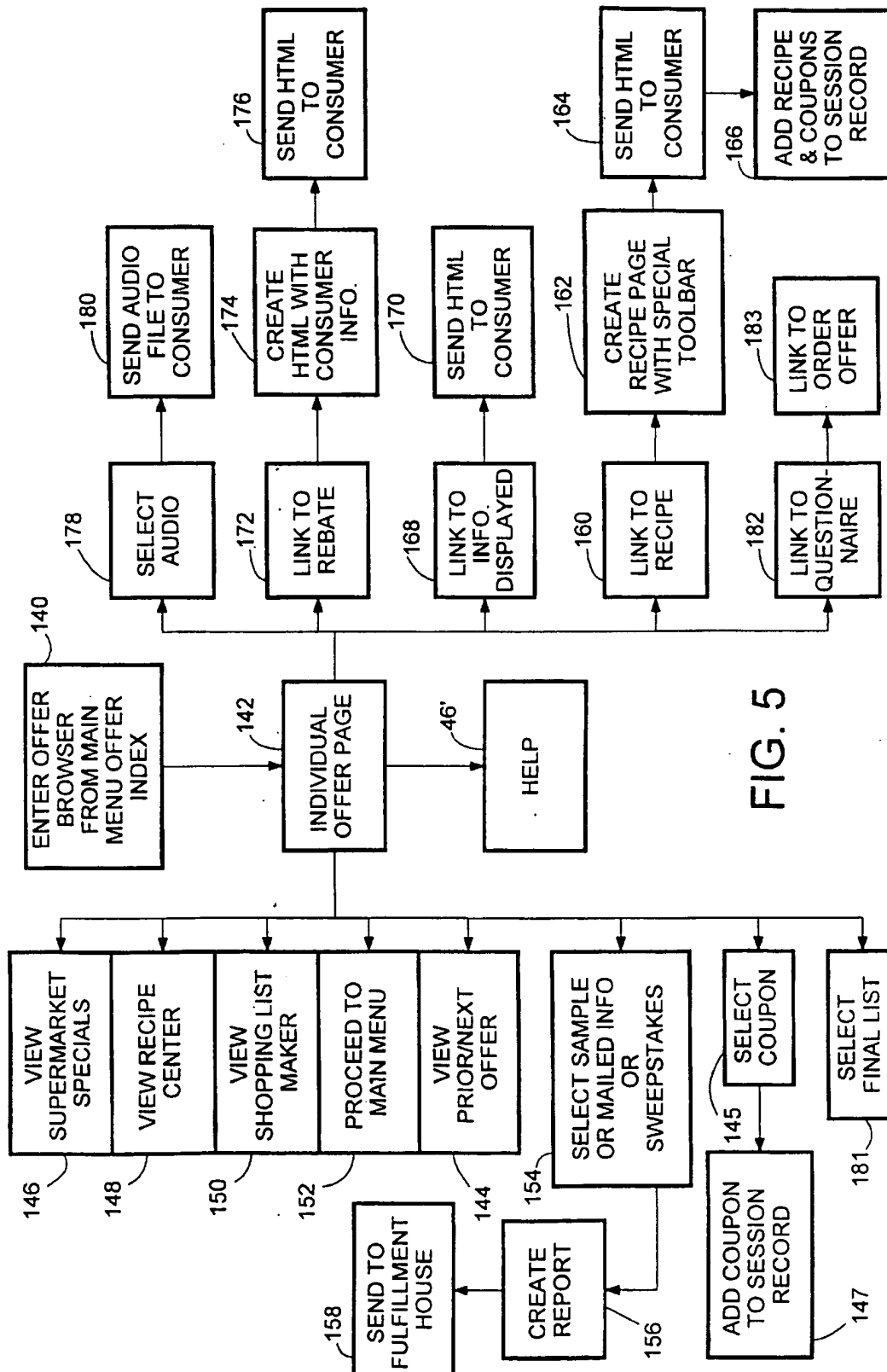


FIG. 5

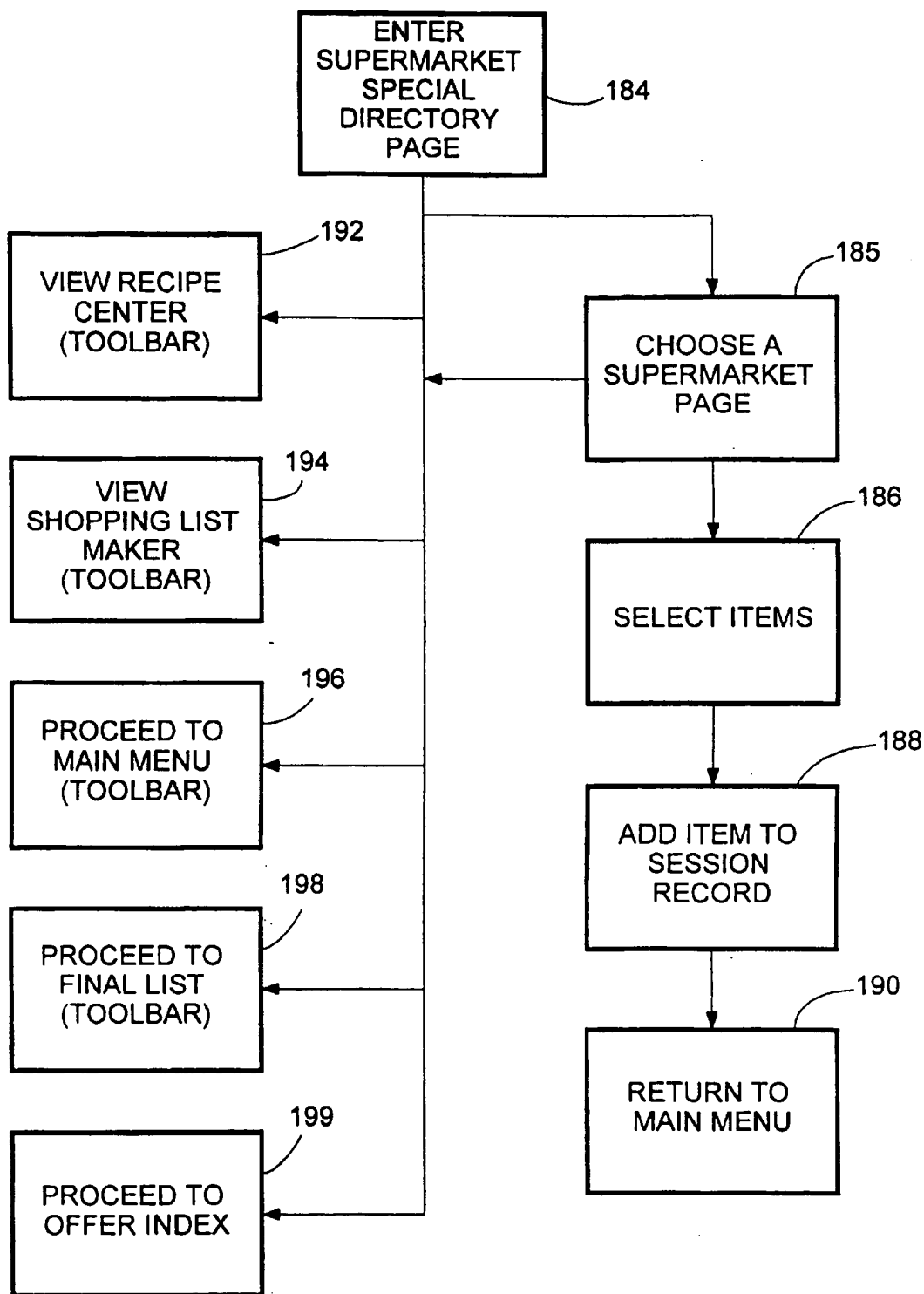


FIG. 6

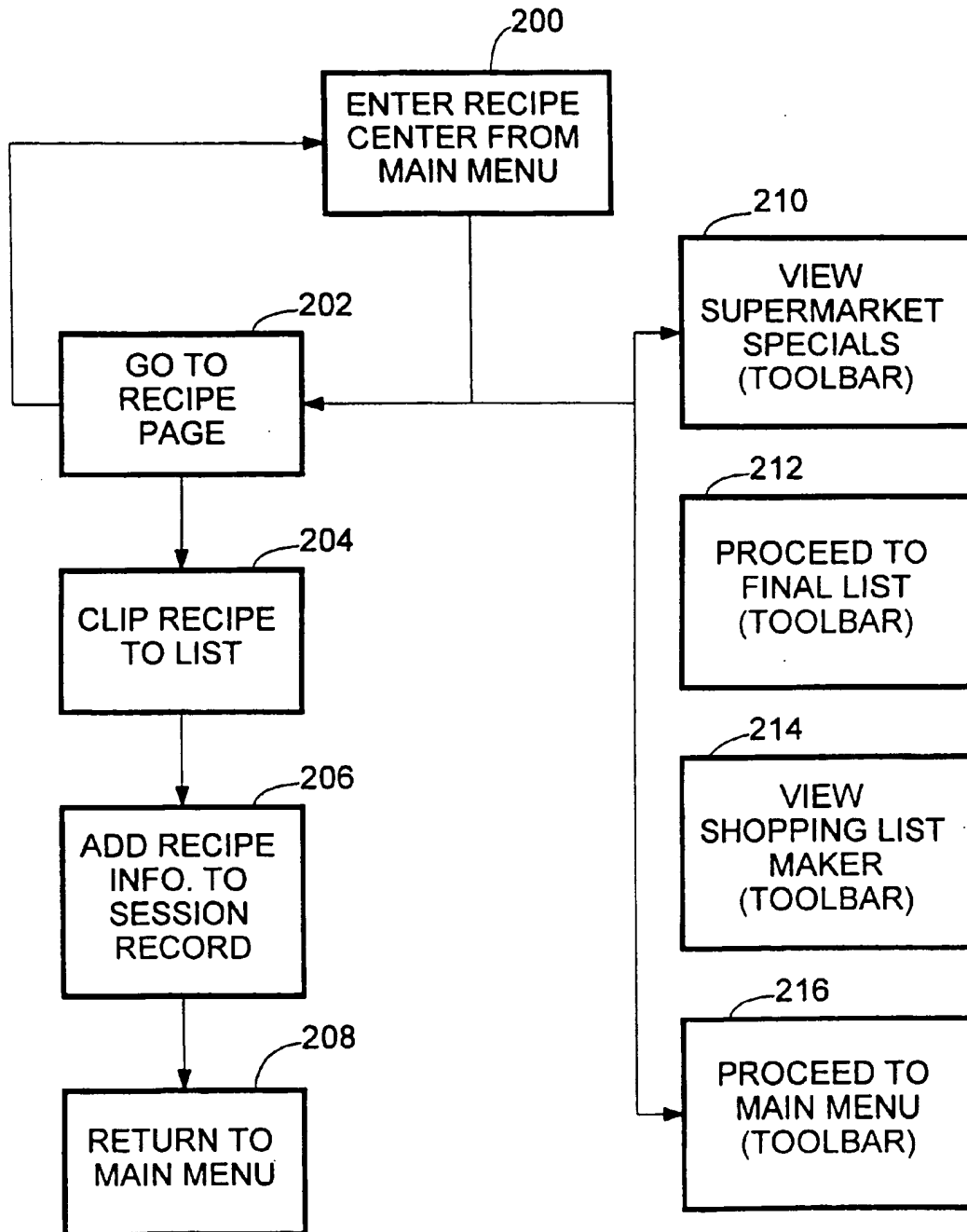


FIG. 7



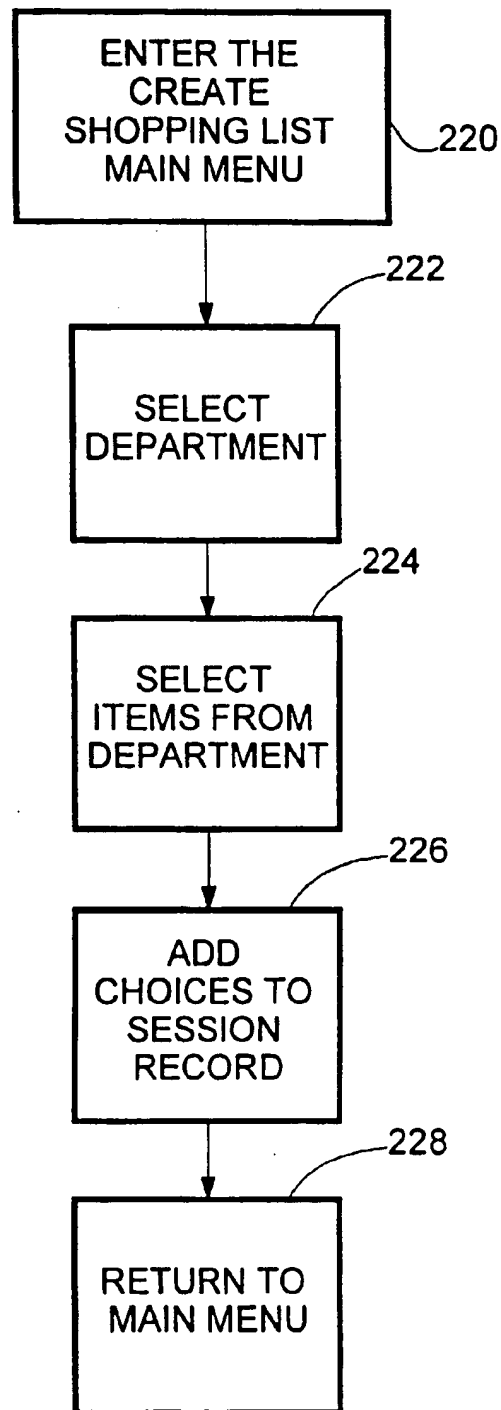
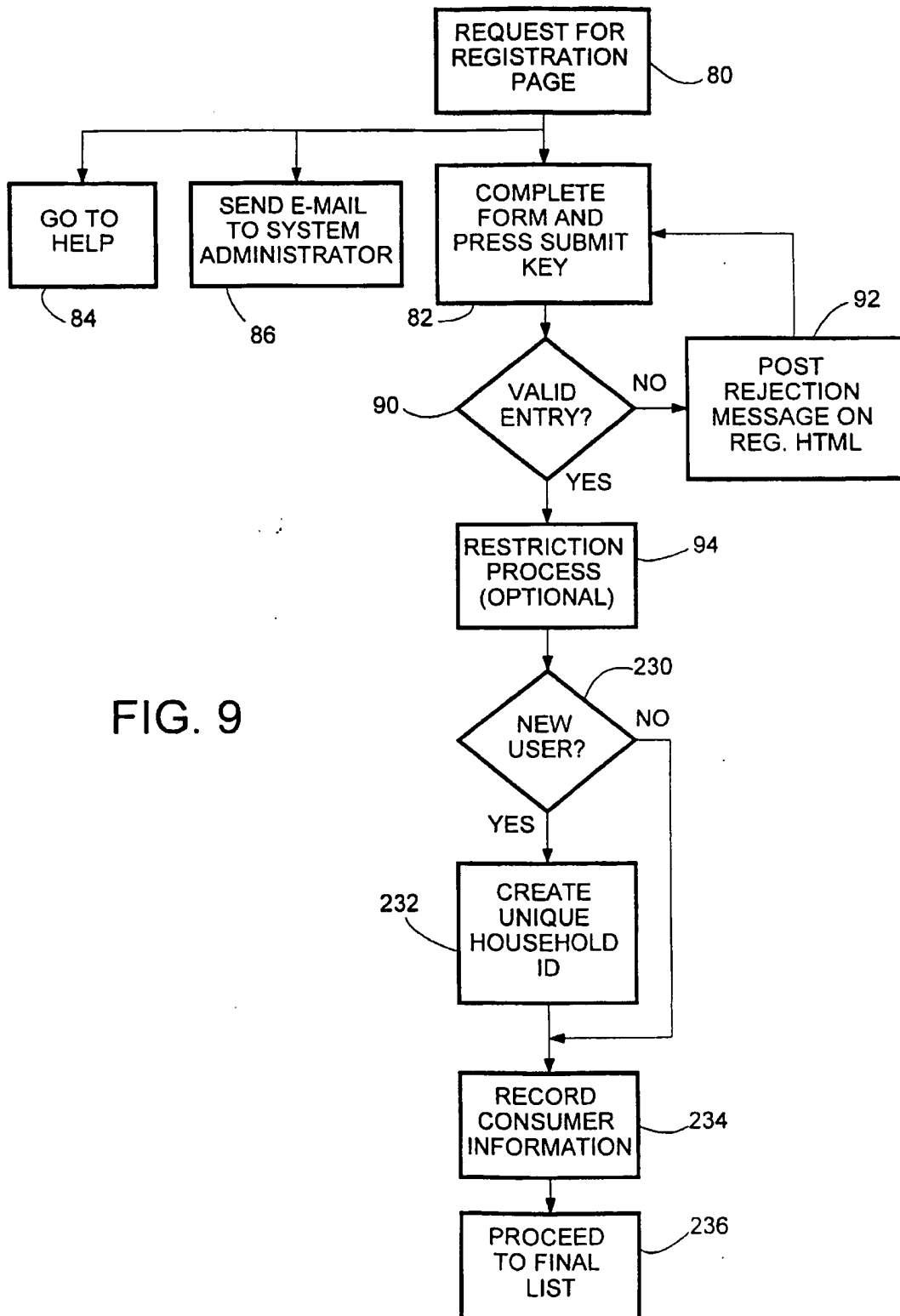


FIG. 8



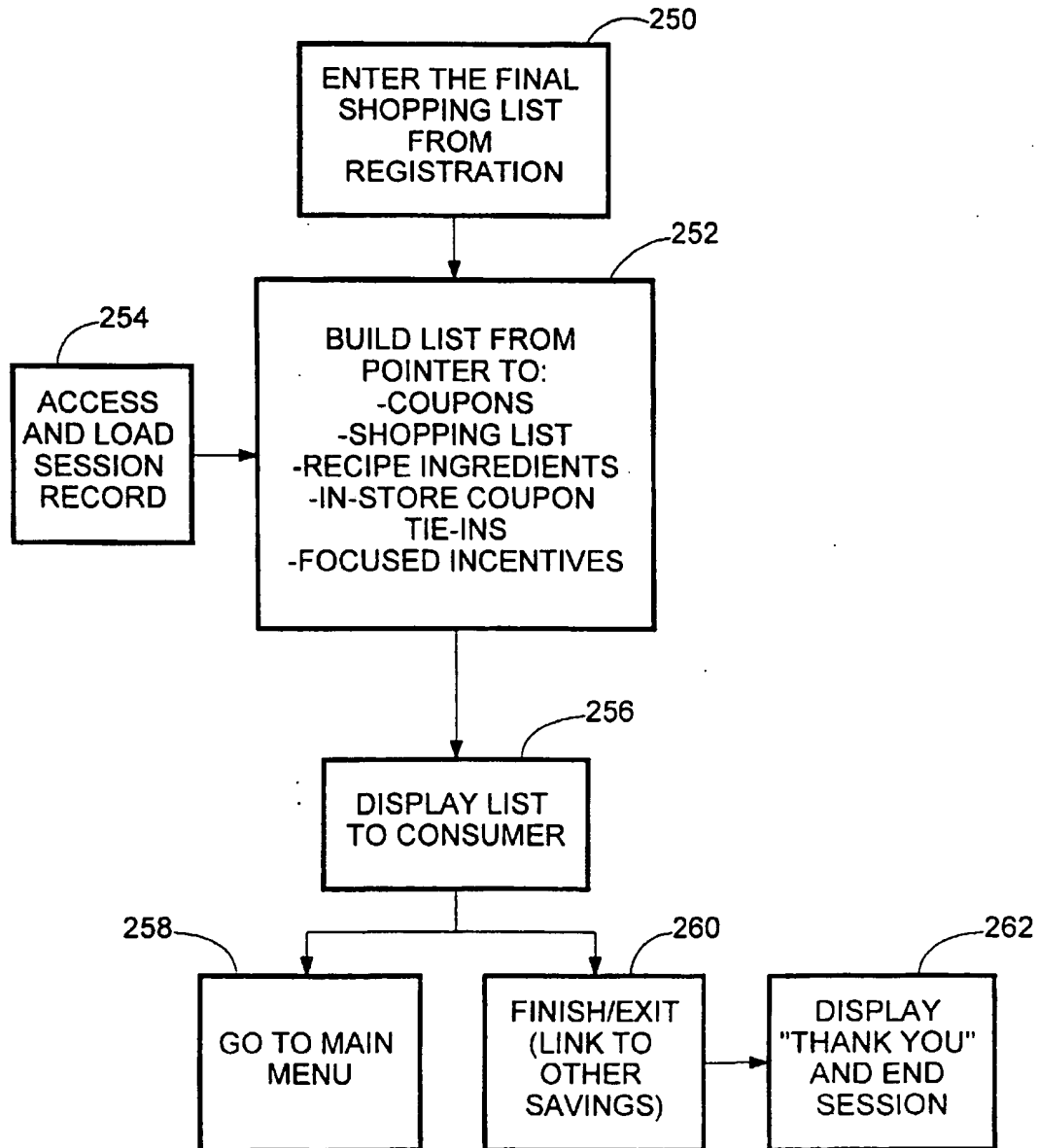


FIG. 10

FIG. 11

MANUFACTURER'S COUPON      EXP. MM/DD/YY — B      \*

CUSTOMER'S NAME — A

**SAVE When You Buy X Amount**

**\$0.00 — E of a certain type — F**

PRODUCT ICON

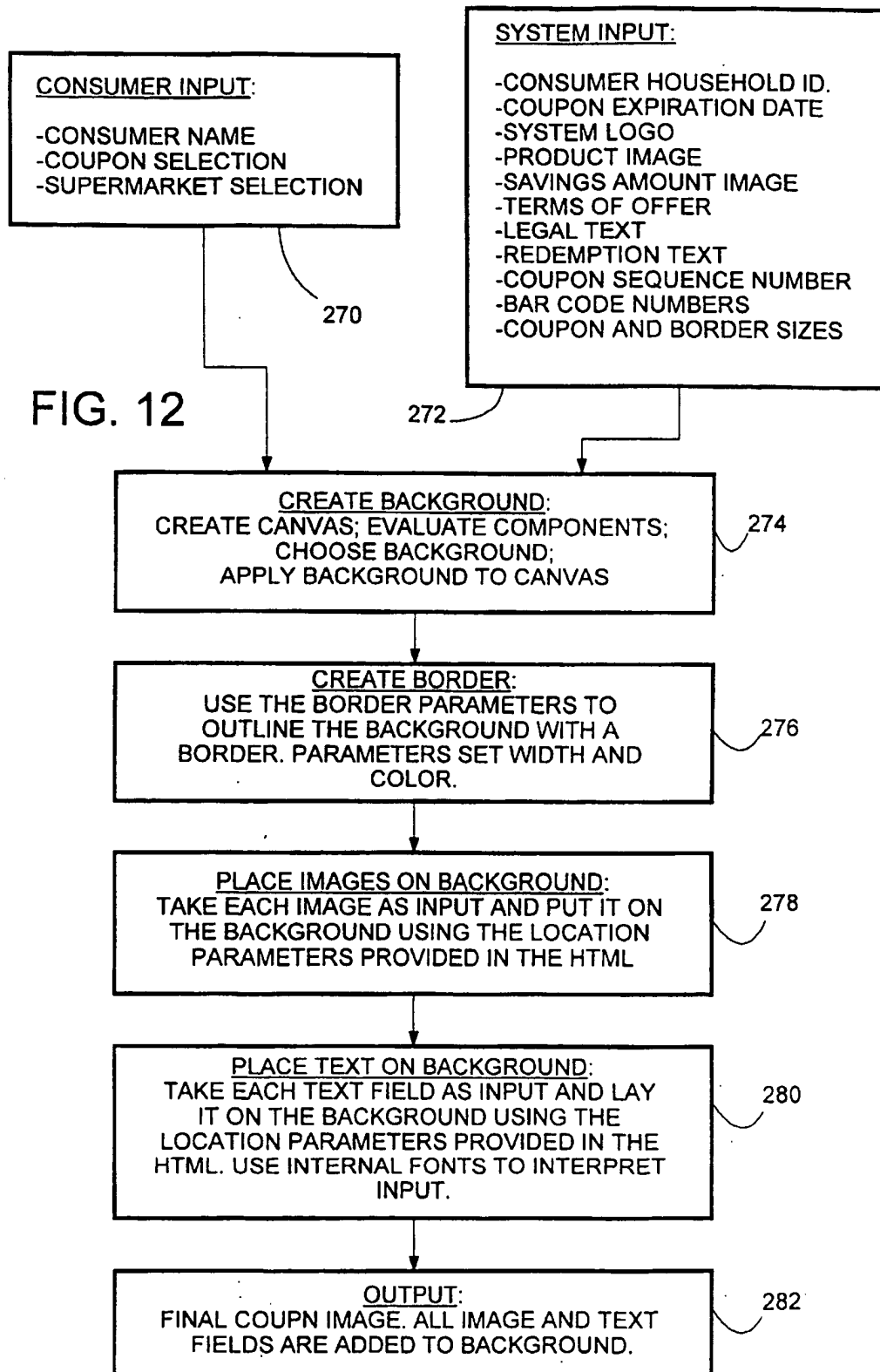
Retailer: We will pay you for face value plus 8 cents provided you and consumer have complied with offer. Void where prohibited, taxes, or restricted by law. Cash value 1/100 of a cent. Consumer pays any applicable sales tax. Invoices proving product purchase to cover coupons must be available. Limit one coupon per purchase. Must be redeemed prior to expiration date. Coupon may not be duplicated or photocopied. Cannot exceed retail price of couponed product. Cannot be used with other coupons on same item.

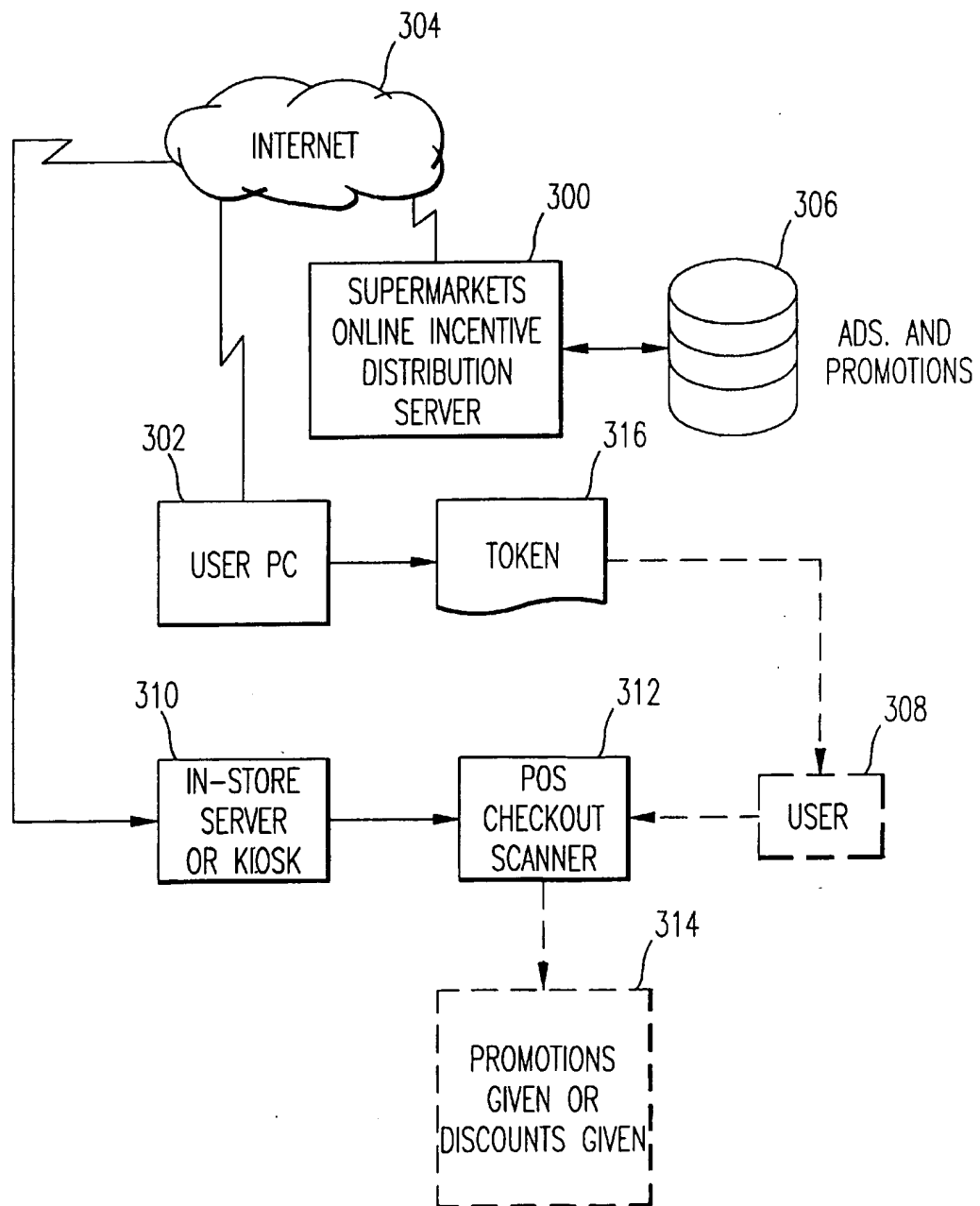
Send coupons to P.O. Box 99999, City, ST. 99999

0 74182261306      #0000000 — I      Redeemable at Designated Supermarket — K

0 74182261306      1X81010543210794X2123456782

- A. CONSUMER'S NAME AND LOCATION COORDINATES
- B. COUPON EXPIRATION DATE AND COORDINATES
- C. SYSTEM ADMINISTRATOR'S LOGO AND COORDINATES
- D. PRODUCT OFFER ICON AND COORDINATES
- E. AMOUNT OF SAVINGS AND COORDINATES
- F. TERMS FOR RECEIVING SAVINGS AMOUNT AND COORDINATES
- G. LEGAL TEXT AND COORDINATES
- H. REDEMPTION TEXT AND COORDINATES
- I. COUPON SEQUENCE NUMBER
- J. BAR CODE NUMBERS AND COORDINATES
- UPC TYPE 5 CODE AND
- EAN TYPE 128 CODE
- L. COUPON SIZE AND BORDER PARAMETERS
- K. SUPERMARKET DESIGNATION AND COORDINATES



*FIG. 13*

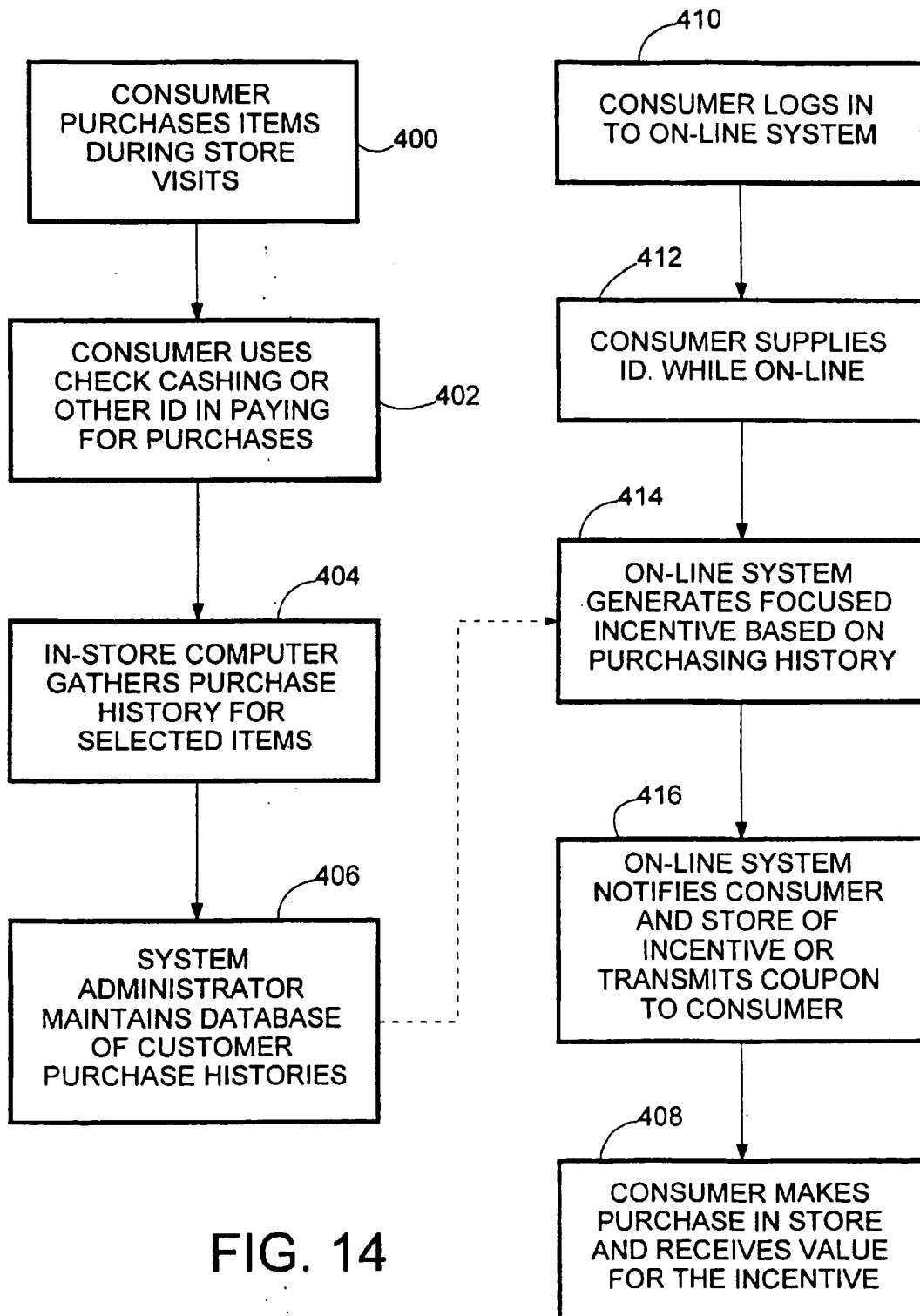
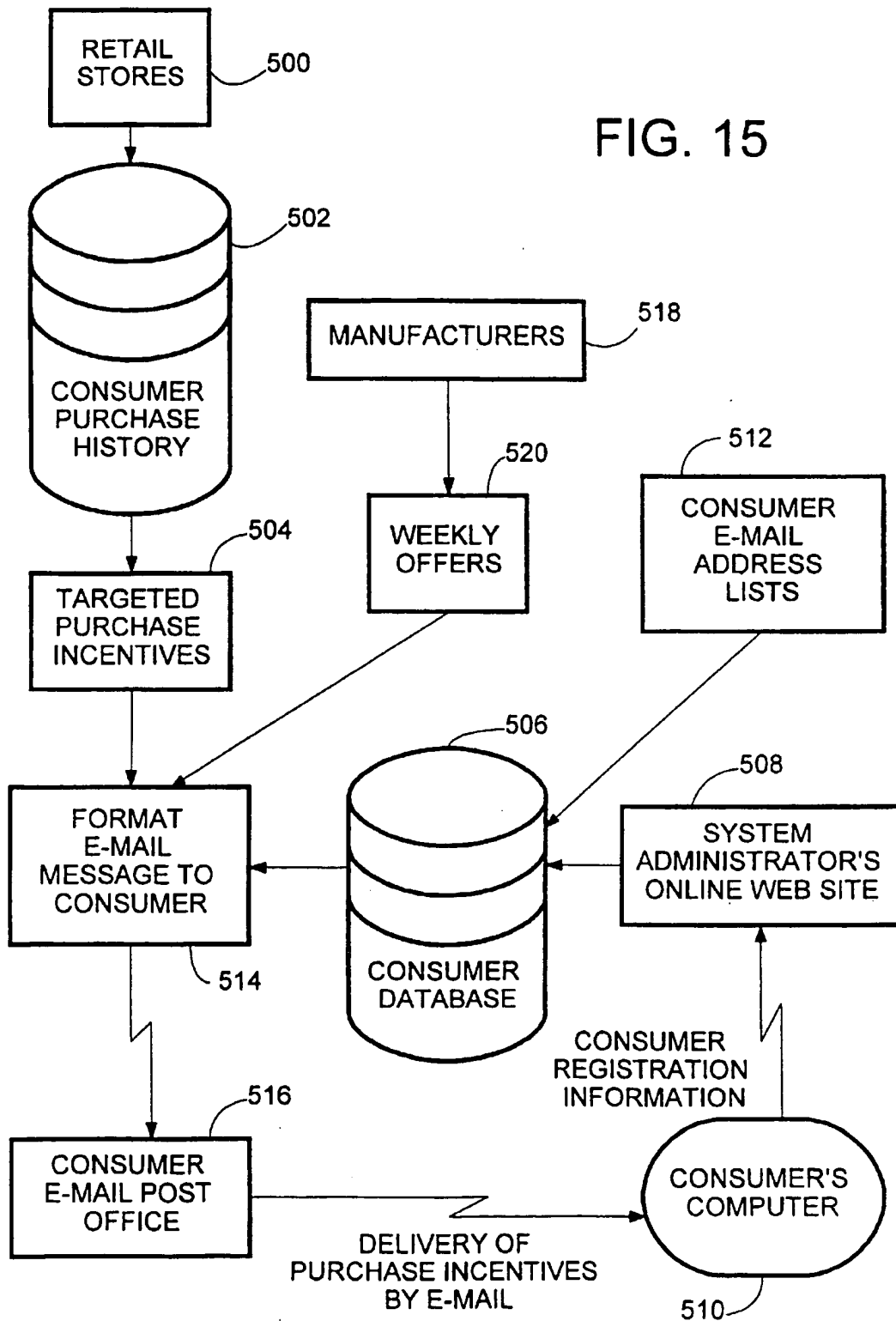


FIG. 14

FIG. 15





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# SYSTEM AND METHOD FOR PROVIDING SHOPPING AIDS AND INCENTIVES TO CUSTOMERS THROUGH A COMPUTER NETWORK

## CROSS-REFERENCES TO RELATED APPLICATIONS

This application is a continuation of application Ser. No. 08/622,685 filed on Mar. 26, 1996 now U.S. Pat. No. 5,970,469 which claims priority to Provisional Application Ser. No. 60/009,244 filed on Dec. 26, 1995.

## BACKGROUND OF THE INVENTION

This invention relates generally to systems for providing incentives to customers to shop in retail stores and, more particularly, to systems for delivering customer incentives and other shopping aids via a computer network. Various approaches have been widely used to deliver purchasing incentives, usually in the form of printed discount coupons, to customers of retail stores. Coupons have been distributed to customers by mail, either in a random manner or in a more demographically focused manner. Coupons have also been delivered to customers in retail stores, either from kiosks or at the check-out stand in response to the customer's purchase of some preselected item or items. The latter technique is well documented in prior patents assigned to the same assignee as the present application; e.g., U.S. Pat. No. 4,723,212, "Method and Apparatus for Dispensing Discount Coupons."

In recent years, an increasing number of retail store customers also own personal computers and, of these, many have access to computer network services that provide connections to the Internet and the World Wide Web. Although some computer sites connected to the World Wide Web have begun to offer "online" shopping services, and some services have proposed to deliver discount coupons through a computer network, the full potential of online delivery of incentives has not been realized prior to the present invention.

## SUMMARY OF THE INVENTION

The present invention resides in a system and method for the distribution, via a computer network, of incentives and other related shopping aids useful to retail customers. Importantly, the incentives are distributed in such a way that they may be redeemed only at a specific retailer selected by each customer.

Briefly, and in general terms, the method of the invention comprises a sequence of steps performed at a central site in cooperation with a communication device at a customer site. The steps include logging in a remotely located customer using identity data and geographic region data transmitted by the customer over a communication network; transmitting back to the registered customer a plurality of incentive offers, the incentive offers being exercisable in the customer's geographic region; and then receiving incentive offer selection data from the customer over the communication network, the offer selection data including the designation of a retailer at which selected offer or offers may be exercised. In response to the customer selection data, the method performs the steps of generating a purchasing incentive containing (in encoded form) the identity of the retailer designated by the customer and the identity of the customer; and transmitting at least one incentive to the customer over the communication network, for subsequent printing by the

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customer. For security reasons, the transmitted incentive may be encoded with the identity of the retailer selected by the customer, and preferably also contains a customer identification code.

An important element of the invention is that it permits the customer to plan his or her shopping and shopping-related activities more efficiently. To this end, the method also includes the step of communicating with the customer concerning the use of shopping aids other than incentives or coupons. In one aspect of the invention, this communicating step includes transmitting a list of products available for purchase, receiving customer selections from the list of products, and then transmitting a shopping list to the customer. Thus the customer may browse through a list or index of available products, preferably organized by store department, and then make selections by marking appropriate entries on a computer screen, such as by positioning a mouse pointer on the desired items and clicking a mouse button.

Another aspect of the invention includes the steps of transmitting meal planning information, including a list of recipes, to the customer, receiving a customer selection of one or more recipe, transmitting back to the customer a shopping list that includes ingredient products needed in each selected recipe, and possibly transmitting to the customer at least one purchase incentive pertaining to an ingredient product used in a selected recipe. While shopping for products with purchasing incentive offers, or while preparing a shopping list, the customer may also use this feature to obtain the details of any recipe that is found to be of interest. The system of the invention transmits the recipe in two separate portions: (a) a complete copy of the recipe in traditional format, including a list of ingredients, and preparation and serving instructions, and (b) the list of ingredients in shopping list form, which the customer may take to the store. The latter portion of the recipe is added to the customer's shopping list automatically and the system transmits a purchase incentive or coupon if an incentive offer is associated with any of the recipe ingredients. The system also provides other meal planning information such as meal calorie and fat content, vegetarian meal ideas and recipes, recipes for meals that can be prepared in under thirty minutes, and so forth.

The purchasing incentive offers in the presently preferred embodiment of the invention are derived from two sources: product manufacturers and retailers. The manufacturers' incentives are presented to the customer in the form of a convenient index that the customer can browse through and select from. Similarly, retail supermarkets provide the source of another set of special offers, organized by store.

Another important aspect of the invention is the manner in which incentives or coupons are generated in the system of the invention. Specifically the step of generating a purchase incentive includes converting numeric and textual information provided by the customer to graphical form; converting other numeric and textual information to graphical form; and merging the converted information with other graphical information defining the incentive, to form a composite graphical incentive image for transmission to the customer.

In one embodiment of the invention the step of transmitting at least one incentive includes transmitting only an advisory message to the customer, and transmitting the terms of the incentive directly to the retail store selected by the customer, for use by the customer on a subsequent visit to the store. In a related embodiment, the step of transmitting

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at least one incentive includes transmitting only an incentive token to the customer, and transmitting the terms of the incentive directly to the retail store selected by the customer, for use by the customer, who brings the token to the store on a subsequent visit, and receives the discount or other benefit defined by the incentive offer.

The invention may also be defined in terms of a method for distributing purchasing incentives and other shopping aids to customers over a communication network, the method comprising the steps of: (1) registering as a customer by providing at least an individual identification, a postal region code, and retail store selection; (2) transmitting from a central site and receiving at a remote customer site, a plurality of incentive offers, each of which is exercisable based on the customer's postal region; (3) selecting at the customer site one or more of the incentive offers and transmitting these selections back to the central site; (4) generating at least one purchasing incentive containing in encoded form the identity of the retail store selected by the customer and the identity of the customer; and (5) transmitting at least one incentive to the customer.

The invention may also be defined in terms of a system for distributing purchasing incentives to retail customers, the system comprising a communication network establishing bi-directional communication between a central site and each of a plurality of customer devices; a file at the central site containing a plurality of incentive offers; and a computer located at the central site, for coordinating bi-directional communication with the customers over the communication network. The computer at the central site includes means for registering customer information at the central site, based on information transmitted from any of the customer devices to the central site computer, over the communication network, the customer information including geographical region data and identification data; means for retrieving incentive offers from the file of incentive offers, based on the customer's geographical region, and transmitting the retrieved offers to the customer over the communication network; means for receiving customer selections made from the incentive offers transmitted to the customer, and for receiving a customer designation of a retailer at which the selected incentives are to be exercised; means for generating at least one purchasing incentive containing in encoded form the identity of the retailer designated by the customer and the identity of the customer; and means for transmitting the generated purchasing incentive to the customer over the communication network.

More specifically, the system further comprises another file at the central site containing a list of products available for purchase; and the computer at the central site further includes means, responsive to a customer request, for transmitting the list of products to the customer, receiving customer selections from the list, and transmitting a shopping list back to the customer. The system may further comprise another file at the central site containing meal planning information available for customer use; and the computer at the central site further includes means, responsive to a customer request, for transmitting meal planning information including a list of recipes to the customer, receiving customer selections from the list, and transmitting complete recipes back to the customer, together with an ingredients shopping list and any associated purchasing incentives.

In the disclosed embodiment of the invention, the means for retrieving incentive offers and transmitting them to the customer includes a manufacturer offer file containing purchasing incentive offers currently proposed by manufacturers of products for sale to customers, and also includes a

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retailer offer file containing purchasing incentive offers currently proposed by retailers of products for sale to customers.

In one form of the invention, the generated purchasing incentive is transmitted to the customer in the form of an advisory message only, and the computer further includes means for transmitting the terms of a purchasing incentive directly to the retail store designated by the customer, who may then exercise the incentive upon visiting the designated store. In a related form of the invention, the generated purchasing incentive is transmitted to the customer in the form of an encoded token, and the computer further includes means for transmitting the terms of the purchasing incentive directly to the retail store designated by the customer, who may then exercise the incentive upon visiting the designated store and presenting the token.

Implementation of the invention in the form of a network site, such as a World Wide Web site, represents a significant departure from prior, conventional uses of Web sites for commercial purposes. Instead of being administered by or for a single commercial entity, the Web site through which customers communicate in accordance with the present invention is a cooperative site involving both retailers and manufacturers, to provide customers with a variety of information, planning aids, and shopping incentives from multiple sources.

A difficulty with conventional incentive distribution methods is that different retail marketing areas have different weekly cycles on which incentives and discounts are based. In one area, retailers may advertise weekly specials beginning on Thursdays in preparation for weekend buying, while in another area they may advertise weekly specials in a Sunday newspaper supplement. Manufacturers may offer special deals that are completely unsynchronized with these local retailer cycles, based, for example, on a calendar week starting on some other day. In the cooperative site on which the present invention is implemented, all the advertised incentives, whether coming from retailers or manufacturers, can be timed to comply with the advertising cycle of the local retail region.

Another aspect of the invention allows the customer to receive more focused incentives if he or she elects to supply a customer identifying number (customer id.) normally used in the purchase of items at the retail store. The customer id. may be a check-cashing card number or other customer loyalty card number, or may be some other form of identification used to pay for purchases. Because the store can track the purchasing history of each customer who consistently uses the same customer id. when paying for the purchases, a customer who supplies this customer id. to the on-line system of the present invention may then receive more targeted incentives based on his or her prior purchasing history. For example, the customer may receive an incentive for his or her favorite brand of toothpaste, based on a prior purchase of the same toothpaste some weeks earlier. If the customer elects not to provide the customer id. to the on-line system, these more targeted incentives will not be available to that customer.

It will be appreciated from the foregoing summary that the present invention represents a significant advance in the field of retail marketing using computer networks. In particular, the system of the invention provides a highly secure incentive distribution scheme because each incentive or coupon may identify the retailer at which the coupon may be used, and also preferably identifies the customer to whom the coupon was issued. The invention also provides a variety

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of other planning aids to customers sing computers before visiting a supermarket. These aids include the generation of a shopping list for the customer, the distribution of selected recipes, together with ingredients lists and incentives, if any are available for the ingredients, and the distribution of product information or rebate forms. Other aspects and advantages of the invention will become apparent from the following more detailed description, taken in conjunction with the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an overall process flow diagram of the system of the invention;

FIG. 2 is a flow diagram of the log-in process used by a customer in accordance with the invention;

FIG. 3 is a flow diagram of a restriction process used to restrict access to only authorized customers in a selected geographic region;

FIG. 4 is a flow diagram of the main menu process of the system of the invention;

FIG. 5 is a flow diagram of an offer browser process used in the system of the present invention;

FIG. 6 is a flow diagram of a supermarket specials process used in the system of the present invention;

FIG. 7 is a flow diagram of a recipe center process used in the system of the present invention;

FIG. 8 is a flow diagram of a shopping list maker used in the system of the present invention;

FIG. 9 is a flow diagram of a registration process used in the system of the present invention;

FIG. 10 is a flow diagram of a final list process used in the system of the present invention;

FIG. 11 is a pictorial view of a coupon for purposes of explaining how its components are merged dynamically for transmission to the customer;

FIG. 12 is a flow diagram of the process of dynamic coupon creation used in the system of the present invention;

FIG. 13 is a simplified block diagram depicting an alternate embodiment of the invention in which coupons are not distributed directly to customers;

FIG. 14 is a simplified block diagram depicting another aspect of the invention, in which customer id. information volunteered by the on-line customer is used to generate more focused purchase incentives to be transmitted to the customer; and

FIG. 15 is a simplified block diagram depicting another aspect of the invention, whereby targeted and untargeted incentives are delivered to consumers by electronic mail.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

As shown in the drawings for purposes of illustration, the present invention pertains to a system for the distribution of shopper incentives and related shopping aids by means of a computer network to which customers have access at remote locations, such as in their homes.

##### Overview:

FIG. 1 provides an overview flow diagram of the system of the invention.

The system provides a unique communication network connecting consumers, indicated at block 10, retailers 12 and manufacturers 14. The consumers 10 log in and fulfill login requirements as indicated in block 16, and may then proceed to a main menu 20. From the main menu 20, a

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consumer may elect to go to an offer browser index page 18, which is linked to an offer browser 22. The offer browser 22 has associated sub-offers 24 available for consumer selection. Basically, the offer browser 22 receives offer data from the manufacturers 14 on a periodic basis, and displays the offers to consumers 10 who have logged in to the system. The offer and sub-offer structure permits consumers to select coupon offers, rebate offers, or information offers made available by the manufacturers. Selected offers are accumulated in a session record maintained for the time that each consumer is logged in to the system.

From the main menu 20, a consumer may also elect to go to a shopping list 26, under which store departments 28 provide lists of products for sale. The consumer may mark any items for entry on a shopping list to be printed later. The consumer may also elect to go from the main menu to a recipe index 30, which provides a linkage to previously stored recipes 32. In response to consumer selection of a recipe 32, the ingredients are automatically entered into the consumer's final shopping list, and any coupon offers or rebate offers associated with any of the ingredients are also automatically included in the final list to be transmitted to the consumer. A consumer may also elect to go from the main menu 20 to a supermarket special index 34, which has linkages to previously stored supermarket special offers 36. These have been entered and periodically updated by the retailers 12. Again, any selected items are automatically entered into the consumer's final shopping list.

When the consumer has finished selecting from the offer browser 22, the shopping list index 26, the recipe index 30 and the supermarket special index 34, he or she may elect to go the final list 40. Prior to generation of the final list, the consumer will be required to enter a valid Internet address for electronic mail (E-mail), and to select a supermarket in his or her area, as indicated in block 42. Once the final list has been generated, the consumer may elect to leave the system through an exit page 44, which may have links to other areas of the system. As also shown in FIG. 1, the consumer may also elect to go to a help page 46, which is accessible from any of the other principal blocks shown in the overview, as indicated by the connections to the main menu 20 and the log-in block 16. The functions described briefly in this overview should become clearer as each is discussed below in more detail.

##### The Log-in Page:

On first accessing the system of the invention, the consumer encounters the Log-in page, which provides a starting point for each online session. The Log-in page contains a log-in process, as indicated in the flowchart of FIG. 2. A log-in page is presented to the consumer, as indicated in block 80, and the consumer completes an on-screen form and presses (clicks on) a "submit" key, as indicated in block 82. There may be other on-screen buttons available to the user, such as a "help" button 84 and a button 86 to select that E-Mail be sent to the system administrator. At Log-in time, the user is required to enter his or her ZIP code or other postal code, since many of the features of the system are location-dependent. If the postal code entry is determined to be invalid, in block 90, a rejection message is posted on the user's screen, as indicated at 92. If the entry is valid, a restriction process 94 may be performed, then the session is started, as indicated at 96, and the system proceeds to present the main menu to the user, as indicated in block 98.

The restriction process 94 is shown in more detail in FIG. 3. The ZIP or postal code passed to the process from a calling program, such as the Log-in program, as indicated in block 100. Then the ZIP or postal code is checked for

validity, in block 102. Initially, the system may not be in operation in all postal codes, and this validity check restricts access to those consumers with appropriate postal codes. Moreover, not all ZIP or postal codes are necessarily valid or in use. In addition, the ZIP code determines what offers are transmitted to consumers, based on the market areas they reside in. If the postal code is invalid, a rejection message is transmitted to the user, as indicated in block 104.

Optionally, the restriction process also checks the Internet address of the user, referred to as the Internet Protocol (or IP) address, as indicated in block 106. If the IP address is not acceptable, a rejection notice is transmitted to the user, as indicated in block 108. If the IP address is found to be valid, return is made to the calling Log-in program to complete the restriction process, as indicated at 110. Another possibility occurs when there is some doubt, but not certainty, concerning the user's IP address. A trace route is optionally performed on the user's IP address, as indicated in block 112, and the validity is checked once more, as indicated in block 114. If the IP address is this time found to be valid, an IP address table of valid addresses is updated, as shown in block 116, before exiting the process. If the block 114 finds the IP address still invalid, an advisory message is sent to the system administrator, as indicated in block 118, before updating the valid IP address table and exiting the process.

A "help" page is accessible from the Log-in page and from other pages in the system. Its purpose is provide a high-level flowchart to the user, together with associated narrative information, to explain the major functions of the system and how they interrelate in a single session. The "help" page also provides the benefits of the system and functions as an enticement for the user to register.

#### The Main Menu:

As one might expect, the main menu provides the user with a central page from which all the major functions of the system can be reached. As shown in FIG. 4, the main menu is entered from the Log-in page, indicated at block 120, and provides a main menu and offer index, as indicated in block 122. The main menu screen gives the user at least eight different functions that are selected by pointing and clicking on an appropriate button or icon. The functions include:

- Select the recipe center (block 124),
- Select supermarket specials (block 126),
- Select help (block 128),
- Select E-Mail to the system administrator (block 130),
- Select the shopping list maker (block 132),
- Select an offer from an index of offers (block 134),
- Select going to an offer browser (block 136), and
- Select final list processing (block 138).

The final list is a composite of all prior activities of the user during the current online session. In the offer browser, the user may select an offer from a matrix of offers (the offer index), and the selected offer is then added to the final list for this session. In the shopping list maker, the user selects specific items that he or she intends to purchase during the next store visit. These items are added to the final list. The recipe center allows the user to select one or more recipes from an offered list. The ingredients needed in the recipes are also added to the final list. The supermarket specials button allows the user to choose any of a number of advertised specials and add these to the final list.

#### Offer Browser:

The offer browser contains advertised offers submitted by product manufacturers. As shown in FIG. 5, the offer browser is entered from the main menu, via block 140, and opens with an individual offer page 142. The offer page

contains details of an offer, along with a number of control buttons. The user may select prior or next offers, as indicated in block 144, or may select a coupon based on the offer, as indicated in block 145, the coupon being added to the session record as indicated in block 147. Each offer may have a number of sub-offer options associated with it, including:

- adding the coupon to the final list,
- entering a sweepstakes competition automatically,
- displaying a rebate form, for completion and adding to the final list,
- displaying information about the product involved in the offer,
- mailing information about the product involved in the offer,
- playing an audio message related to the offer,
- mailing a sample of the product involved in the offer,
- displaying a recipe associated with the product involved in the offer, and
- presenting a questionnaire associated with the offer.

Offers can be "clipped" by the user only once per session, and validity checking ensures that each offer enters the session file, and final list, only once. FIG. 5 shows the principal functions that may be performed in the offer browser, including: a help button 46', a view supermarket specials button 146, a view recipe center button 148, a view shopping list maker 150, a return to main menu button 152, and a button 154 to select a sample, mailed information or sweepstakes entry. The latter button initiates generation of a report containing the customer information and is sent to a fulfillment center, as indicated in blocks 156 and 158. Other options shown in FIG. 5 include a link to recipe button 160, actuation of which results in creation of a recipe page (block 162), which is sent to the user or customer (block 164), and also results in the recipe and coupons being added the final list (block 166). Another function is to link to the display of additional offer or product information, as indicated in blocks 168 and 170. Also shown is a link to obtain a rebate (blocks 172, 174 and 176), a link to select audio information (blocks 178 and 180) and a link to the final list 181. Finally, there is a link 182 to a questionnaire that the consumer may complete, and an associated link 183 to an order offer. Supermarket Specials:

Another main menu function is to provide linkage to a supermarket specials page. Information for this page is provided by participating supermarket retailers and is limited by supermarket shopping area determined from the user's ZIP or postal code.

As shown in FIG. 6, a user of this feature first enters a supermarket special directory page 184, i.e. a directory of supermarkets in his or her shopping area. The user selects a supermarket, as indicated in block 185, and then may select items included in the current list of special offers by the selected supermarket, as indicated in block 186. Each selected item is added to the session record and, subsequently, to the final list, as shown in block 188, and then the process returns to the main menu, as indicated in block 190. If the user elects not to take advantage of any of the supermarket specials, the user has the option to exit to other functions in the system, as shown in blocks 192, 194, 196, 198 and 199.

#### Recipe Center:

FIG. 7 shows the recipe center functions, which are displayed when the user enters the recipe center from the main menu or elsewhere, as indicated in block 200. The user in this page may elect to go to the recipe page (block 202)

and clip a recipe from the displayed list of recipes (block 204). A selected ("clipped") recipe will be added to the information in the session record (block 206), for eventual inclusion in the final list, and then recipe center process is terminated by a return to the main menu (block 208). If no recipe is selected, the user may exit the recipe center as shown in blocks 210, 212, 214 and 216. Each recipe page section contains recipe ingredients and instructions, as well as coupon offers for various ingredients or recipe mixes. When the recipe is added to the final list, the associated coupons are also included.

#### Shopping List Maker:

The shopping list maker is entered, as indicated in block 220, from the main menu, or from any of various other screens. The user may select a store department (block 222), such as meat, produce, and so forth, then select from displayed items sold in that department, as indicated in block 224. The selected items are added to the session record, as indicated in block 226, before a return is made to the main menu, as indicated in block 228. Items may be selected for adding to the shopping list whether or not any of the items is subject to a manufacturers' or supermarket special offer. Optionally, manufacturer and retailer offers may be displayed in the appropriate sections to alert the user of specials available.

#### Household Registration:

A more specific registration procedure is provided immediately before the consumer enters the phase of final list generation. At log-in, the only information needed to go forward with the session was the consumer's ZIP or postal code. At this stage, before generation of the final list, registration requires a valid E-mail address. Optional information includes a first name and a last name of the consumer, a street address, city and state, and selected demographic information including the number of persons in the household, age categories of persons in the household, and number of pets, if any, in the household. The primary purpose of the registration is customer identification, with a secondary purpose of demographic analysis.

FIG. 9 shows the registration process, which is similar to the Log-in process of FIG. 2, and identical reference numeral are used where appropriate. During the registration process, the customer's E-mail address is verified for correct syntax, as shown in block 90. The first time the customer registers, the E-mail address is used to create a unique household identification (id.), as shown in blocks 230 and 232. Subsequently, the user's household id. is used to reference prior registration information. The next steps are to record or update the consumer information, as indicated in block 234, and to proceed to final list generation, as indicated in block 236.

#### Final List Generation:

FIG. 10 shows the principal functions performed when the user enters the final list generation phase, as indicated in block 250. The system builds the final list, as indicated in block 252, using the session record that has accumulated items selected by the user, as indicated in block 254. The final list is displayed to the user, as indicated in block 256, and the user may then exit to the main menu (block 258) or go to an exit page (block 260), which may have links to other shopper savings opportunities. The final list generation phase also contains hyperlinks to sites established by individual manufacturers and retailers. Finally, the system displays a "thank you" message and ends the session, as indicated in block 262.

When the user enters the final list generation phase, he or she will have to make a selection from a list of supermarkets

in the immediate shopping area. All the coupons printed will be specific to this selected supermarket, and invalid everywhere else.

The final list will contain everything that the consumer has selected during the current session, including shopping list items, supermarket specials, a shopping list of recipe ingredients of selected recipes, including any special offers, and may also provide a recipe page giving the ingredients and preparation instructions for each selected recipe, rebate forms complete with customer information, a summary of offers selected, and coupons in redeemable format. Information encoded onto each coupon will include the product code, the consumer's household id., an offer code, an expiration date, a serial number, a valid supermarket id. and Internet consumer's name.

#### Dynamic Coupon Creation:

Unlike coupons printed for distribution by mail or printed on an in-store printer, the coupons distributed over the Internet in accordance with the present invention, are created in real time to include information provided by the consumer at his or her remote location. Thus each coupon image is generated dynamically to include this consumer-supplied information, which is required principally for security reasons. As explained earlier, each coupon contains not just a product code and coupon conditions, but also the consumer's name or household id., the retailer id. where the coupon must be redeemed, and a coupon sequence number for added security. Merging all this information into a graphical image in a real time mode for transmission over the computer network posed additional challenges for implementation of the invention.

More specifically, the input information that has to be incorporated into each coupon includes:

- The consumer's name and the location coordinates for location on the coupon,
- The coupon expiration date and its coordinates,
- The logo of the system and its coordinates,
- The product offer icon and its coordinates,
- The amount of savings and its coordinates,
- The terms for receiving savings amount and its coordinates
- The legal text and its coordinates,
- The redemption text and its coordinates,
- The coupon sequence number and its coordinates,
- The bar code numbers and their coordinates,
- The supermarket designation and its coordinates, and
- The coupon size and border parameters.

FIG. 11 shows a typical coupon format and FIG. 12 summarizes the functions performed in creating the coupon dynamically. Block 270 lists the input items obtained from the consumer: the consumer name, the coupon selection and the supermarket selection. Block 272 lists the input items that are obtained from the system: the consumer's household id., the coupon expiration date, the system logo, the product image, the savings amount image, the terms of the offer, the legal text, the redemption text, the coupon sequence number, the bar code numbers and the coupon border and sizes. Of these, only a few are static, i.e. unchanging from coupon to coupon, such as the system logo and the coupon border and size. The rest are dynamic and dependent on the specific offer selected by the consumer, or dependent on information supplied by the consumer. The expiration date is dynamic in the sense that it is keyed to the coupon issue or print date.

The first step in the coupon creation process, indicated in block 274, is to create the coupon background from the

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coupon size coordinates, to create an image that will be the background of the coupon. The image is created using the standard format known as the graphics image format (GIF). An important feature of the invention is that the printed coupons preferably include a complex background pattern to reduce the potential of fraudulent creation or modification of the coupons. Several intricate background patterns are stored in advance for use in this step of the coupon creation process. The background pattern for current use is selected from the pre-stored patterns on a regular or random basis. The coupon offer information shown in FIG. 11 is printed over the background to render unauthorized creation, modification or duplication more difficult. Basically, the creation of the background includes the steps of first creating a "canvas" for the coupon, such as a one-color background on which the other image elements will be overlaid; then evaluating the coupon components (the retailer, product, text messages and so forth); then selecting a background image based on random or pre-set parameters; and applying the background image to the canvas. Selection of the background pattern may be based, in part, on the content of the coupon. For example, different background images may be used for different manufacturers, different products, or even different consumers. The background image is a complex pattern of relatively light intensity, so as not to interfere with scanned bar codes on the coupon. The pattern may contain textual characters, or a repetitive design, or may be of a variable and seemingly random nature, as depicted in FIG. 11. The complexity and varied nature of the background image makes unauthorized alteration or creation of coupons extremely difficult, because alteration of any of the coupon components, such as price, bar code or text, will also visibly disturb the background image. Although counterfeit coupons may not always be detected in a retail store, the presence of the background pattern makes it likely that they will be detected at some later stage of coupon redemption.

Next, in block 276, the coupon border is created using the border parameters to outline the background with a border of selected width and color. Next, as indicated in block 278, the graphics images in the inputs are placed on the background using the location images provided in the hypertext markup language (HTML).

Next, as indicated in block 280, the text input items, including the bar codes, are placed on the background image using the location parameters provided in the HTML format. Each text character, including ASCII characters and the bar-code numerical quantities, is converted to a graphical image using internally stored font files. Finally, the composite image of the coupon obtained from the preceding steps is merged with other output data and is output to the consumer's computer, as indicated in block 282.

Transmitting Incentives without Physical Coupons:

An alternative arrangement for distributing purchasing incentives over the Internet is illustrated in FIG. 13. This figure shows an incentive distribution server computer 300 and a user's personal computer 302 connected together through a computer network, indicated by the network cloud 304. The server 300 has an associated storage device 306 on which are stored multiple advertisements and promotions. The system as described thus far operates in much the same way as the system described above with reference to FIGS. 1-11. A user 308 logs on to the server 300 through the network 304 and selects from a variety of offers stored on the storage device 306 by manufacturers and retailers. However, instead of transmitting the coupons to the user computer 302, the server 300 functions in accordance with one of the following options:

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(a) The server 300 transmits purchase incentive data to an in-store server 310 in the supermarket selected by the user 308, which gives the user an appropriate discount automatically when he or she presents items for checkout and a point-of-sale checkout scanner 312, with appropriate identification recognized by the in-store server 310. Promotions or discounts are given to the customer, as indicated at 314. The server 300 may also send an advisory message to the customer to confirm the existence of the promotion.

(b) The server 300 transmits the image of a token 316 of some kind to the user's computer 302. The token defines the coupon offer, preferably in coded form, such as in bar codes, but is not recognizable as a coupon. The token may, for example, be an encoded confirmation number. The user 308 presents the token 316 at the store he or she has selected, and receives the appropriate discount or promotion automatically.

Generation and Delivery of Focused Incentives:

The invention may be further enhanced by employing individual purchase histories of individual customers, as depicted in FIG. 14. The shopping behavior of customers is routinely tracked in connection with the generation of in-store incentives in the form of discount coupons printed as the customer pays for his or her purchases, as shown in blocks 400 and 402. Each customer's purchasing behavior is tracked only if the customer provides some form of unique identification during the purchase transactions, such as a check-cashing card, a credit card, a magnetically encoded check, or other form of identification. The purchase of any of a number of selected items can then be associated with a specific customer id., as indicated in block 404, and a system administrator maintains a database of customer purchase histories, as indicated in block 406. When the customer visits the store, a focused incentive may be printed based on a selected event in the customer's past shopping behavior, as indicated in block 408. In accordance with this aspect of the present invention, a customer who has logged in to the system (block 410) is asked to supply the customer id. used for in-store purchases (block 412). The customer id. may be a check-cashing card number, or other form of identification that allows the system to access the customer's purchasing history, and then select a purchasing incentive based on some aspect of the customer's prior shopping history, as indicated in block 414. This incentive is transmitted to the customer, as indicated in block 416, in the form of an Internet message, for retrieval when the customer next accesses the Web site or checks for electronic mail (E-mail). The incentive message informs the customer that one or more specific offers are available and may be received at the checkout stand when the prerequisite products are purchased. Alternatively, a paper coupon may be transmitted to the customer's computer site and printed for later presentation in the store.

Customers who volunteer the necessary linkage in the form of their customer id. may be rewarded in some manner. The customer id. may be requested only once and then used for all subsequent sessions in which the customer logs in to the system. Once the linkage is established, the consumer purchase history data or targeted incentives needed to support this capability of the invention are periodically transferred from the shopper purchase history system to the on-line system of the present invention. Delivery of Incentives by E-mail:

As shown in FIG. 15, the system of the invention also has the capability to deliver targeted or untargeted incentives to consumers through their online E-mail addresses on the Internet or another computer network. Retail stores, indi-

cated by block 500, gather purchase data and either the retailers or an independent system administrator accumulates the consumer purchase history in a database, indicated at 502. The database 502 is developed as a result of consumers being uniquely identified on each visit to the store, by use of a frequent shopper card, a credit card or some other form of identification.

Targeted purchase incentives are generated from the consumer purchase history database 502, as indicated in block 504. The system administrator also maintains a consumer database 506, which identifies consumers by their E-mail addresses. Alternatively, the consumer database 506 may be integrated with the consumer purchase history database 502. The consumer database 506 receives data primarily from the system administrator's Web site, indicated at block 508, which, in turn, receives a consumer's E-mail address from each consumer's computer, indicated at 510. The consumer database 506 may also receive E-mail addresses from independent consumer E-mail address lists, indicated in block 512.

Using E-mail address information from the consumer database 506 and targeted incentive information based on the consumer's purchase history, from database 502, the system of the invention formats an E-mail message to the consumer, as indicated in block 514, and transmits it to the consumer's computer 510 through the consumer's E-mail "post office," as indicated in block 516. The purchasing incentives are delivered to the consumer by electronic mail for subsequent printing of a coupon, or simply in the form of a token of some kind to be taken to the store. This approach allows producing targeted, time phased incentives based on the consumer's actual buying patterns and preferences, and delivering them in the home prior to the consumer's shopping trip.

The same delivery mechanism can also be used to deliver untargeted or less targeted incentives from manufacturers, indicated at 518. The manufacturers may, for example, generate weekly offers, as shown in block 520, which the system delivers to selected consumers. Selection of consumers may be based on a customer profile or on demographic information maintained by the system administrator and selected by the manufacturer. For example, the manufacturer may identify the type of household it would like to target and the incentive would be delivered to designated consumers in the consumer database 506 who meet the profile qualifications.

Another aspect of the invention permits the delivery via E-mail of general messages or incentives to consumers who meet selected non-demographic criteria, such as those who have not recently visited the Web site, or those who have not selected or redeemed online purchase incentives during a recent selected period. In such cases, a special promotion might be delivered to the consumer to encourage more active participation. Untargeted messages or notices can also be broadcast to large numbers of consumers to encourage them to visit a specific retail store, or to purchase a specific manufacturer's product, or to visit the Web site.

Conclusion:

It will be appreciated from the foregoing that the present invention represents a significant advance over other systems for distributing purchasing incentives and other shopping aids via computer network. In particular, the system and method of the invention provide for incentive distribution in such a way that the opportunities for fraudulent generation or use of coupons is minimized, since each coupon uniquely identifies the consumer to whom is was issued and the retail store or chain in which it can be

redeemed. The invention also uses a novel technique for dynamically creating coupon images for transmission over a computer network. In an alternative embodiment of the invention, physical coupons are not printed at all, but coupon data are either transmitted directly to the retail store, or is sent to the consumer in the form of a token instead of a coupon. In addition to the transmission of purchasing incentives over a computer network, the present invention also provides a medium for transmitting other consumer planning aids, such as shopping list selections, recipe selections, rebate offers, and product information, over the network. In a further extension of the invention, if the customer provides an identification number used in payment for in-store purchases, more focused incentives can be transmitted to the customer based on his or her prior shopping history. It will also be appreciated that, although a limited number embodiments of the invention have been described in detail for purposes of illustration, various modifications may be made without departing from the spirit and scope of the invention. Accordingly, the invention should not be limited except as by the appended claims.

We claim:

1. A system for distributing purchasing incentives to retail customers, said system comprising:

a central computer configured to prompt over a computer network a user for region a personal computer configured to transmit the user's region data from said personal computer over said computer network to said central computer; and

wherein, if said user's region data identifies a selected region, said central computer is configured to transmit a selected region incentive offer for a product to said personal computer;

wherein said personal computer is further configured (1) to print or display said selected region incentive offer having a canvas on which at least two members of a set of image elements including the system's logo, an incentive offer's size and border parameters a user's name, a selected region incentive offer's expiration date, a product's icon, a selected region incentive offer's amount, a selected region incentive offer's terms, legal text, redemption text, a selected region incentive offer's sequence number, bar code numbers, and a selected region incentive offer's designated supermarket are overlaid, (2) to select a background image based on random or preset parameters, and (3) to apply said background image to said canvas

wherein the central computer is further configured to transmit terms of the selected region incentive offer and identity data to an in-store server computer.

2. The system of claim 1, wherein said personal computer is further configured to select said background image having a complex pattern such that said background image does not interfere with scanned bar codes on said selected region incentive offer.

3. A system for distributing purchasing incentives to retail customers, said system comprising:

a central computer configured to prompt over a computer network a user for region a personal computer configured to transmit the user's region data from said personal computer over said computer network to said central computer;

wherein, if said user's region data identifies a selected region, said central computer is configured to transmit a selected region incentive offer for a product to said personal computer;



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wherein image elements and their respective location coordinates for location on said selected region incentive offer are transmitted to said personal computer in order to generate said selected region incentive offer, said image elements including:  
the system's logo and  
said incentive offer's size and border parameters;

wherein said image elements and their respective location coordinates for location on said selected region incentive offer further include:

said user's name;  
aid selected region incentive offer's expiration date;  
said product's icon;  
said selected region incentive offer's amount;  
said selected region incentive offer's terms;  
a legal text;  
a redemption text;  
said selected region incentive offer's sequence number;  
bar code numbers; and,  
said selected region incentive offer's designated supermarket; and

wherein said personal computer is further configured (1) to print or display said selected region incentive offer having a canvas on which said image elements are overlaid, (2) to select a background image based on random or preset parameters, and (3) to apply said background image to said canvas

wherein the central computer is further configured to transmit terms of the selected region incentive offer and identity data to an in-store server computer.

4. A system for providing a purchase incentives to customers, said system comprising:

a central computer configured to prompt for data indicating identity and to transmit an incentive offer in response to receiving identity data over a computer network; and

a personal computer configured to transmit the identity data upon being prompted and to transmit offer selection data in response to the incentive offer over the computer network;

wherein in response to the selection data, said central computer is configured (1) to transmit an advisory message to said personal computer confirming the existence of the incentive and indicating that the incentive will be provided when the selected incentive offer is exercised and (2) to transmit terms of the selected incentive offer and the identity data to an in-store server computer.

5. The system of claim 4, wherein said central computer is further configured to transmit an incentive offer only at a time which complies with the advertising cycle of the retailer or manufacture issuing the incentive offer.

6. A system for distributing purchasing incentives to a plurality of personal computers over a computer network, comprising:

a central computer at a central site, said computer network connecting said central computer to said plurality of personal computers;

said central computer including:  
means for transmitting a prompt for personal identity data, said personal identity data defining a personal identity, and region data over said computer network to said plurality of personal computers;

means for storing said personal identity data and region data transmitted from one of said plurality of personal computers over said computer network to said central computer, in response to said prompt;

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means for transmitting an incentive offer over said computer network to said one of said plurality of personal computers, said incentive offer being exercisable only in a region corresponding to said region data received from said one of said personal computers;

means for storing incentive offer selection data transmitted from said one of said personal computers over said computer network to said central computer, wherein incentive offer selection data received from said one of said plurality of personal computers is stored in association with a personal identity associated with that personal computer;

means for generating data defining a purchasing incentive containing in encoded form an identity of a retailer designated by said incentive offer selection data and said personal identity;

means for transmitting said data defining said purchasing incentive over said computer network to said one of said plurality of personal computers;

wherein said means for transmitting said data defining said purchasing incentive comprises:

means for transmitting an advisory message over said computer network to said one of said plurality of personal computers, said advisory message corresponding to said purchasing incentive;

means for transmitting terms of said purchasing incentive to said retailer designated by said incentive offer selection data from said central site; and wherein said purchase message corresponding to said advisory message is exercisable at said retailer designated by said incentive offer selection data.

7. A system for distributing purchasing incentives to a plurality of personal computers over a computer network, comprising:

a central computer at a central site, said computer network connecting said central computer to said plurality of personal computers;

said central computer including:

means for transmitting a prompt for personal identity data, said personal identity data defining a personal identity, and region data over said computer network to said plurality of personal computers;

means for storing said personal identity data and region data transmitted from one of said plurality of personal computers over said computer network to said central computer, in response to said prompt;

means for transmitting an incentive offer over said computer network to said one of said plurality of personal computers, said incentive offer being exercisable only in a region corresponding to said region data received from said one of said personal computers;

means for storing incentive offer selection data transmitted from said one of said personal computers over said computer network to said central computer, wherein incentive offer selection data received from said one of said plurality of personal computers is stored in association with a personal identity associated with that personal computer;

means for generating data defining a purchasing incentive containing in encoded form an identity of a retailer designated by said incentive offer selection data and said personal identity;

means for transmitting said data defining said purchasing incentive over said computer network to said one of said plurality of personal computers;



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wherein said means for transmitting said data defining said purchasing incentive comprises:  
 means for transmitting an incentive token over said computer network to said one of said plurality of personal computers, said incentive token corresponding to said purchasing incentive; and  
 means for transmitting terms of said purchasing incentive to said retailer designated by said incentive offer selection data from said central site;  
 wherein said incentive token is exercisable at said retailer designated by said incentive offer selection data.

8. A method for distributing purchasing incentives to customers, said method comprising the steps of:  
 transmitting a prompt for identity data from a central computer over a computer network to a personal computer;  
 in response to said prompt, transmitting said identity data over said computer network to said central computer;  
 transmitting an incentive offer over said computer network to said personal computer;  
 transmitting incentive offer selection data over said computer network to said central computer; and  
 in response to said selection data, transmitting data defining an incentive token over said computer network to said personal computer, wherein said incentive token is exercisable for said incentive at a store designated by said incentive offer, further comprising transmitting terms of said purchasing incentive to an in-store server computer.  
 9. A method for providing a purchase incentives to customers, said method comprising the steps of:  
 transmitting a prompt for identity data from a central computer over a computer network to a personal computer;

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in response to said prompt, transmitting said identity data over said computer network to said central computer;  
 transmitting an incentive offer over said computer network to said personal computer,  
 transmitting incentive offer selection data over said computer network to said central computer;  
 in response to said selection data, transmitting an advisory message to said personal computer confirming the existence of the incentive and indicating that the incentive will be provided when the selected incentive offer is exercised; and  
 transmitting terms of said selected incentive offer and said identity data to an in-store server computer.  
 10. A system for providing a purchase incentives to customers, said system comprising:  
 means for transmitting a prompt for identity data from a central computer over a computer network to a personal computer;  
 means for, in response to said prompt, transmitting said identity data over said computer network to said central computer;  
 means for transmitting an incentive offer over said computer network to said personal computer;  
 means for transmitting incentive offer selection data over said computer network to said central computer;  
 means for, in response to said selection data, transmitting an advisory message to said personal computer confirming the existence of the incentive and indicating that the incentive will be provided when the selected incentive offer is exercised; and  
 means for transmitting terms of said selected incentive offer and said identity data to an in-store server computer.

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